# RHYSODINE BEETLES <br> (INSECTA: COLEOPTERA: CARABIDAE OR RHYSODIDAE): NEW SPECIES, NEW DATA, AND REVISED KEYS TO OMOGLYMMIUS (SUBGENERA OMOGLYMMIUS AND PYXIGLYMMIUS) 

Ross T. Bell ${ }^{1}$<br>Research Associate, Section of Invertebrate Zoology

Joyce R. Bell ${ }^{1}$


#### Abstract

Three new species of Rhysodidae (Coleoptera: Carabidae or Rhysodidae) are described, Omoglymmius (Omoglymmius) sabah (Borneo), Omoglymmius (O.) cupedoides (New Guinea) and Omoglymmius (Pyxiglymmius) multicarinatus (Sulawesi). Descriptions are given for either males or females of the following four species previously known from only one sex: Clinidium (Mexiclinidium) championi Bell and Bell, Clinidium (C.) dubium Grouvelle, Rhyzodiastes (Temoana) propinquus Bell and Bell, Omoglymmius ( $O$.) repetitus Bell and Bell. Range extensions are given for six species: Omoglymmius (O.) sus Bell and Bell, Omoglymmius (O.) ichthyocephalus (Lea), Omoglymmius (Hemiglymmius) javanicus (Grouvelle), Clinidium (C.) rojasi Chevrolat, Kaveinga (K.) abbreviata (Lea) and Kaveinga (K.) histrio Bell and Bell. The locality for Omoglymmius (Hemiglymmius) germaini (Grouvelle) is confirmed as Java, as previously hypothesized, not Bolivia as designated in the original description. Revised keys to Omoglymmius (Omoglymmius) and Omoglymmius (Pyxiglymmius) are provided.


## Introduction

In previous papers (Bell, 1970, 1973, 1975, 1977; Bell and Bell, 1975, 1978, $1979,1981,1982,1985,1987 a, 1987 b, 1987 c, 1988,1989,1991)$ we have treated the rhysodid beetles of the world. The present paper extends our work by providing descriptions of three new species, descriptions of sexes not previously described for four species, significant range extensions for six species and correction of an erroneous early locality record. A revision of the key to Omoglymmius (Omoglymmius), which covers 92 species including 14 species described since Bell and Bell (1982), is provided. Also included is a revised key to Omoglymmius (Pyxiglymmius), incorporating the species described in addition to the ten previously described in Bell and Bell $(1982,1985)$. Both keys contain geographical distribution information.

Abbreviations used in the text are: BMNH, Natural History Museum, London; CMNH, Carnegie Museum of Natural History, Pittsburgh; CMNO, Canadian Museum of Nature, Ottawa; CNCO, Canadian National Collection, Ottawa; HNHM, Hungarian Natural History Museum, Budapest; LEI, Rijksmuseum vor Natuurlijke Historie, Leiden, Netherlands; SAMA, South Australian Museum, Adelaide; UVM, University of Vermont, Burlington; ZMUC, Zoologisk Museum, Copenhagen. L/GW, ratio of pronotal length divided by its greatest width.

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# Systematics <br> New Species Descriptions <br> Omoglymmius (Omoglymmius) sabah, new species 

(Fig. 1, 2)
Type specimens. - Holotype female, labelled "Borneo, Sabah, Mt. Kinabalu Nat. Pk., Poring Hot Springs, 500 m., 10.V.87, A. Smetana" (CNCO). Paratypes: one female, labelled "Borneo, Sabah, Mt. Kinabalu N.P. above Poring Hot Springs, 530 m., 9.V.87, A. Smetana" (CNCO); two females, labelled "Borneo, Sabah, Mt. Kinabalu N.P. Por. H.S. area, Langanan Fall, 900 m., 14.V.87, A. Smetana" (CNCO, UVM).

Etymology. - This species is named for the state in which it was first collected.
Diagnosis. - An Omoglymmius ( $O$.) without postorbital or suborbital tubercles, with a pollinose scarp at base of Stria IV, and the outer pronotal carinae punctate but inner carinae impunctate. Among species with this combination of characters, it is distinguished by having antennal segments $\mathrm{V}-\mathrm{X}$ punctate, basal punctures in grooves, and many setae along the length of Stria IV.


#### Abstract

Description. - Length $5.8-6.5 \mathrm{~mm}$. Antennal segments I-IV very coarsely punctate; segments V-X with coarse basal punctures set in a groove (Fig. 2); head 1.2 times longer than wide; median lobe moderately short, apex narrowly rounded; lateral margin shallowly curved; medial angles obtuse, nearly in contact; posteromedial margin evenly curved into posterolateral margin, posterior margin of temporal lobe thus evenly rounded, occipital angle not distinct; orbital groove fine, fading to line of punctures opposite posterior margin of eye; temporal lobe with 12-15 punctures mainly in posterolateral portion; 1-2 temporal setae; postorbital and suborbital tubercles absent; eye large, round (Fig. 1).

Pronotum moderately elongate, L/GW about 1.40 , widest slightly anterior to middle, base and apex narrowed; lateral margins curved, at most scarcely sinuate anterior to hind angle; carinae subequal at middle; medial margin of outer carina slightly sinuate anterior to base; outer carina widest anterior to middle, abruptly, obliquely narrowed to apex; gradually narrowed to base; inner carina widest at middle, gradually narrowed to apex, and nearly to base, but abruptly dilated at extreme base; outer carina with about 14 coarse punctures; inner carina impunctate; pronotum without setae; posternum without distinct precoxal carinae.

Elytron relatively long, narrow; striae impressed, coarsely punctate; base of Stria IV with longitudinal pollinose scarp; Stria II with 2-3 setae near apex; Stria IV with about seven rather stout setae; apical striole with one seta; extreme apex of Stria VII with 4-5 setae; metasternum with irregularly scattered coarse punctures; punctures of Sterna III-V coarse, numerous, tending to form broad transverse bands; female with shallow lateral pit on Sternum IV, and slight suggestion of one on Sternum V; Sternum VI densely punctate, with one pair of setae; legs coarsely punctate; male unknown.


Distribution. - Known only from the type locality at Mt. Kinabalu.
Remarks.-Omoglymmius hiekei Bell and Bell, which was also described from Mt. Kinabalu, differs in that it lacks carinal punctures, temporal punctures, and basal antennal punctures. Grouvelle (1903) described Rhysodes (Omoglymmius) borneensis from Sambey River, West Borneo. The holotype has not been located,

Fig. 1-2.-Omoglymmius (s. str.) sabah, new species. Fig. 1. - Head, pronotum, dorsal aspect. Fig. 2.-Antennal Segments VIII-XI. Fig. 3-7.-Omoglymmius (s. str.) cupedoides, new species. Fig. 3Head, pronotum, dorsal aspect. Fig. 4. - Head, left lateral aspect. Fig. 5. - Prothorax, left ventrolateral aspect. Fig.6.-Metasternum, abdomen, ventral aspect, male. Fig. 7. - Hind tibia, male. Fig. 8-11.Omoglymmius (Pyxiglymmius) multicarinatus, new species. Fig. 8. - Head, pronotum, dorsal aspect. Fig. 9.-Head, left lateral aspect. Fig. 10.-Left elytron, dorsal aspect. Fig. 11.-Metasternum, abdomen, ventral aspect, female.

but his description stated that the species has punctate inner carinae. Since $O$. sabah has impunctate inner carinae it cannot be conspecific with the Grouvelle species.

One of the paratypes of $O$. sabah has bilateral angular setae. This is highly unusual because the only species of the subtribe of Omoglymmiina to have angular setae is Xhosores figuratus (Germar) from South Africa. This singular specimen must be aberrant.

## Omoglymmius (Omoglymmius) cupedoides, new species

(Fig. 3-7)
Type specimens. - Holotype male, labelled "Friedrich-Wilh. Hafen, N. Guinea, Biró, $96^{\prime \prime}$ (HNHM). Paratype: one female, same data as holotype (UVM).
Etymology. - The name means "resembling the beetle Cupes." This name was selected by O. Adám of the Hungarian Museum who had intended to describe the species. When he learned of our work on the genus he generously allowed us to describe it.

Diagnosis. - An Omoglymmius with a postorbital tubercle, a scarp at the base of Stria IV and both inner and outer carinae of pronotum punctate. The lesser width across the postorbital tubercle and the more acute tip on the median lobe separates it from $O$. sus; the narrow, acute median lobe separates it from $O$. monteithi.

Description.-Length 7.0 mm . Antennal segments I-VIII with small basal punctures; segments IX, X more finely punctate; segment XI impunctate; head distinctly longer than wide; median lobe narrowly lance-shaped, frontal space " $U$ " shaped, its margins distinctly curved; medial angles pointed, narrowly separated; posteromedial margins shallowly emarginate; posterolateral margin evenly curved; occipital angle very obtuse; antennal lobe connected to temporal lobe by depressed pollinose ridge; orbital groove absent; temporal lobe with about 20 fine punctures; one temporal seta; postorbital tubercle small, less than 0.25 of length of eye, but visible in dorsal view (Fig. 4); eye large, round.

Pronotum elongate; L/GW about 1.25 (Fig. 3), widest near middle, base slightly narrowed, apex strongly narrowed; lateral margins slightly curved posteriorly, markedly curved anteriorly; margin not sinuate anterior to hind angle; outer carina slightly narrower than inner carina at middle; medial margin of outer carina sinuate, angulate medially; outer carina widest slightly anterior to middle, becoming somewhat narrower toward base; very strongly narrowed to apex; inner carina narrowly truncate at base; outer carina with about 27 fine punctures; inner carina with about 20 fine punctures; prosternum without precoxal carinae (Fig. 5).

Elytron elongate; striae impressed; strial punctures coarse except near apex of elytron; base of Stria IV with longitudinal pollinose scarp; small pollinose spot at base of Stria II; seta at apex of Stria IV present or absent, one seta in subapical striole; 2-3 setae near apex of marginal stria; metasternum entirely coarsely, densely punctate; abdominal Sterna III-V with coarse rather dense punctures except near anterior and posterior margins of each sternum, these punctures confluent near lateral margin; female with deep, narrowly oval, slightly oblique lateral pit on Sternum IV; male with large, deep, round pit on Sternum IV (Fig. 6); male with ventral tooth on profemur, female with obtuse angle in this position; middle calcar narrow, acute, and large; hind calcar triangular, rather deep, tip narrowly rounded, dorsal and ventral margins sinuate (Fig. 7).

Distribution. - Known only from the type locality of Friedrich-Wilhelmshafen, now called Madang, Papua New Guinea.

## Omoglymmius (Pyxiglymmius) multicarinatus, new species

(Fig. 8-11)
Type specimen. - Holotype female (unique), labelled "Indonesia: Sulawesi Utara, Dumoga-Bone N.P., April 1985, Plot B, ca. 300 m . lowland forest, flight interception, Trap 3, R. Ent. Soc. Lond, Project Wallace, B.M., 1985-10" (BMNH).

Etymology. - The name refers to the carinate intervals $3,5,6,7$ of the elytra.
Diagnosis. - Distinguished by the presence of narrow pronotal carinae, carinate elytra, and setose temporal lobes and the absence of grooves on the lateral metasternum of the female. It differs from all other members of the subgenus in having some elytral intervals carinate. This and the narrow pronotal carinae are suggestive of Omoglymmius (Carinoglymmius) hexagonus (Grouvelle) and Omoglymmius (Carinoglymmius) carinatus (Grouvelle). These two species are known from Borneo, Sumatra, and the Mentawei Islands, and either might be found in Sulawesi. They can be separated from this new species by the evenly curved medial margins of the temporal lobes, the straight tibial spur of the middle leg and the abdominal pits of the female being on Sternum V rather than IV.

Description. - Length 7.8 mm . Antennal segment XI wider than long, obtuse; basal setae and ring setae on segments $\mathrm{V}-\mathrm{XI}$; head longer than wide; clypeus impunctate, continuous with median lobe, latter narrow, longer than wide, rhomboidal, tip obtuse; anteromedial margin of temporal lobe oblique; both pairs of medial angles closely approximate; margin between them relatively shallowly emarginate; temporal lobe convex, rounded laterally with about ten punctures in posterolateral fourth, and with orbital groove represented by a row of punctures; approximately six temporal setae; region between temporal and antennal lobes depressed, pollinose; postorbit flat dorsad to postorbital tubercle; both tubercle and postorbit punctate, setose; tubercle relatively small (Fig. 9); gular grooves each with line of four very coarse punctures; most posterior of these on either side of small gular tubercle.
Pronotum L/GW 1.14; subcordate, base distinctly narrowed, apex more strongly so; all grooves much dilated, leaving very narrow, sinuate carinae; carinae and marginal grooves coarsely punctate (Fig. 8).
Elytra elongate, intervals conspicuously unequal, III, V, VI, VII narrow, carinate; I, II, IV scarcely convex; subapical tubercle divided by deeply impressed subapical striole; striae coarsely punctate except near apex where punctures become fine; two setae in apex of Stria IV, one in subapical striole; about five in apex of Stria VII (Fig. 10); female without groove along lateral margin of metasternum; abdominal sterna with coarse, scattered punctures; female with deep, smooth, triangular lateral impressions on Sternum IV, without "brace" or conspicuous striations (Fig. 11); margin of elytral epipleura not angulate opposite sternal pit; profemur of female with slight ventral angle; wings full (tip of wing visible between elytra on type specimen, which was taken in a flight intercept trap), male unknown.

Remarks. - In the key to Rhysodini of Sulawesi and Banggai (Bell and Bell, 1988), this species will trace to the first choice in couplet 3 which should be altered to lead to the new couplet:

### 3.1 Medial margin of temporal lobe emarginate, forming two medial angles Omoglymmius (Pyxiglymmius) multicarinatus new species <br> 3.1' Medial margin of temporal lobe not emarginate, one medial angle ( Om oglymmius, s. str.) <br> 4

Distribution. - Known only from the northern peninsula of Sulawesi (Celebes).
Descriptions of Males and Females Not Characterized Previously

## Clinidium (Mexiclinidium) championi Bell and Bell

Description of female. -6.0 mm , labelled "Guat: Quetzaltenango, 12 km . S.E. Zunil, N.W. face Cerro Zunil, 2700-2760 m., 28.V.1991, R. Anderson, hardwood for. litt. 91-30" (UVM). Very similar to male (Fig. 12, 13) (complete description in Bell and Bell, 1985:62); transverse abdominal sulci represented by lines of isolated punctures interrupted medially; lateral pit of Sternum IV deep, widely flared anteriorly; lateral pit of Sternum V round, small; lateral pit of Sternum III minute; Sternum VI unimpressed, small round lateral pit at anterolateral angle; curved submarginal groove; ventral tooth of profemur absent.

Remarks. - The original description was based on a unique holotype from the Quiché Mountains which did not have precoxal setae. Subsequently we have
studied another specimen with the same locality data and this specimen did have precoxal setae. The female here described also has precoxal setae so the original description should be amended.

## Omoglymmius (Omoglymmius) repetitus Bell and Bell


#### Abstract

Description of male. -5.8 mm , labelled "N. Sulawesi, Dumoga Bone NP, base camp, alt. m. 211, 13014 1985, J. Huijbregts, RMNH/HH 401, cult. area at light" (LEI). Very similar to female (Fig. 14) (complete description in Bell and Bell, 1982:222); lateral pit of abdominal Sternum IV deep, slightly smaller than in female (Fig. 15); anterior femur with small ventral tooth or tubercle evidently varying in development (distinct, although minute tooth on right femur, but only a well-marked mound-like tubercle on left one in this specimen); middle calcar minute, hind calcar (Fig. 16) moderate in size, obtusely pointed, dorsal margin angled.


Additional collecting data. - All from the Dumoga Bone National Park; one female labelled "Torout, alt. 210 m. 15-16 VIII 1985, J. Huijbregts, secondary growth, river bank, at light" (LEI); one female labelled " 27 Feb 1985, lowland forest, Plot C, ca. 400 m ., frass under bark of fallen tree" (BMNH).

## Rhyzodiastes (Temoana) propinquus Bell and Bell

Description of male. -6.0 mm , labelled "Nicobar, Roepstorff" (ZMUC). Very similar to female (Fig. 17) (complete description in Bell and Bell, 1985:43); metasternum with fine median sulcus, transverse sulci of abdominal sterna broadly interrupted at midline, sulci deeply pilose at medial ends, shallowly pollinose laterally; lateral pit of Sternum IV very deep, that of Sternum V shallow (Fig. 18); posterior one-third of Sternum VI impressed (Fig. 19); ventral tooth of profemur and protibia absent; calcar acute, triangular (Fig. 20).

Remarks. - It is unusual for a male rhysodid to have a lateral pit on Sternum IV equally deep as that of the female.

## Clinidium (Clinidium) dubium Grouvelle

Description of a female. $-5.0-6.8 \mathrm{~mm}$ (14 specimens) all labelled "Ecuador; Loja, Loja-Saraguro, $2680 \mathrm{~m} ., 18$ Nov. 1990, G. Onore, km. 17 of new road Loja to Saraguro, in rotten $\log$ in disturbed habitat" (CMNH). Similar to male holotype (Fig. 21) (complete description in Bell and Bell, 1985: 115); metasternum with complete narrow pilose median sulcus; pilose median sulcus of Sternum III interrupted at midline, complete on Sterna IV--VI; U-shaped submarginal groove of Sternum VI not connected to transverse sulcus; Sternum IV with large deep lateral pit, that of Sternum V shallow; Sternum VI unimpressed (Fig. 22); ventral tooth of profemur and protibia absent.

## Range Extensions

Omoglymmius (Hemiglymmius) javanicus (Grouvelle, 1903)
All previous collecting sites for $O$. javanicus have been from the western twothirds of Java, the easternmost point being near Jogjakarta. Two specimens found in the Copenhagen collection, a male ( 5.6 mm ) and a female ( 6.8 mm ) are labelled "Camorta, Nicobar, Roepstorff" (ZMUC), thus extending the range west of Sumatra to the Nicobar Islands.

Fig. 12-13.-Clinidium (Mexiclinidium) championi Bell and Bell. Fig. 12.-Head, pronotum, dorsal aspect. Fig. 13.-Metasternum, abdomen, ventral aspect, female. Fig. 14-16.-Omoglymmius (s. str.) repetitus Bell and Bell. Fig. 14.-Head, pronotum, dorsal aspect. Fig. 15.-Metasternum, abdomen, ventral aspect, male. Fig. 16.-Hind tibia, male. Fig. 17-20.-Rhyzodiastes (Temoana) propinquus Bell and Bell. Fig. 17.-Head, pronotum, dorsal aspect. Fig. 18.-Metasternum, abdomen, ventral aspect, male. Fig. 19.-Sternum VI, lateral aspect, male. Fig. 20.-Hind tibia, male. Fig. 21-22.Clinidium (s. str.) dubium Grouvelle. Fig. 21.-Head, pronotum, dorsal aspect. Fig. 22.-Metasternum, abdomen, ventral aspect, female.


## Omoglymmius (Omoglymmius) ichthyocephalus (Lea, 1904)

This species is described in more detail in Bell and Bell (1991). It was known previously from northern Queensland, Australia, from Cairns north to Cape York. In addition we have seen one male ( 5.0 mm ) and two females (both 7.0 mm ) labelled "Mt. Lamington, N.E. Papua, 1300-1500 ft., C. T. McNamara" (SAMA), thus extending the range into Papua New Guinea.

Remarks. - Omoglymmius ichthyocephalus was not included in our key to the subgenus (Bell and Bell, 1982) because we were not able to treat the Australian fauna at that time. In our key to the New Guinean species (Bell and Bell, 1982: 192), it traces to Omoglymmius (O.) oroensis Bell and Bell. Omoglymmius ichthyocephalus differs from the latter species in the following particulars: median lobe (not including clypeus) entirely impunctate; medial angles of temporal lobes closer together; temporal lobes broader; posterolateral margin not bent near temporal seta; orbital groove extended to posterior margin of eye; pronotum less narrowed anteriorly; outer carina narrower and more narrowed at base; inner carina with about ten fine punctures; outer carina with about 35 fine punctures; hind calcar not concave dorsally.

As stated in the original description of $O$. oroensis, several specimens were referred provisionally to that species, although they differed in various minor ways from the holotype. This group of specimens, including $O$. ichthyocephalus, will need further study when more material becomes available. It may be a complex of closely related species, or there may be only one variable species.

## Omoglymmius (Omoglymmius) sus Bell and Bell 1982

This species was known previously from New Guinea at Katau, Fly River, Western Province and Morobe Province. One additional specimen has been located in the Copenhagen Museum, a male ( 8.0 mm ) labelled "Bismarck Islands, Lavongai, Banatam, 20 March 1962, Noona Dan Exp. 61-61" [New Hanover Island] (ZMUC). This is an important addition to the inadequately known fauna of the Bismarck Archipelago.

## Clinidium (Clinidium) rojasi Chevrolat, 1873

The range of this species is previously given from Falcon State east to Aragua State, Venezuela. A male ( 5.9 mm ) was found in the Copenhagen collection labelled "Guiana, Lansberg" (ZMUC), thus extending the range of this species eastward to Guiana.

## Kaveinga (Kaveinga) abbreviata (Lea, 1904)

The subgenus Kaveinga is represented by several species in New Britain, the Solomons, New Guinea, and Mindanao but this species has been recorded previously only from various sites in northern Queensland, Australia, from Daintree to Millaa Millaa and Babinda (Bell and Bell, 1991). Recently we have seen two specimens from the Budapest Museum, one male ( 5.9 mm ) labelled "Biró 1898, Sattelberg, Huon Gulf" (HNHM) and one female ( 6.0 mm ) labelled "Biró 1899 , Sattelberg, Huon Gulf" (HNHM) which extends the range to New Guinea.

Kaveinga (Kaveinga) histrio Bell and Bell 1979
The species is known from the holotype and two paratypes collected on the east slope of Mt. Apo (Mt. McKinley), 3300 ft Davao Prov., Mindanao, Philip-
pines. One additional female ( 6.2 mm ) specimen has been located labelled "Indonesia: Sulawesi, Utara, nr. Danau Mooat, 1200 m., nr. Kotamobagu, 17 Feb. 1985, rotten log, Roy. Ent. Soc. Lond. Project Wallace, BM 1985-6" (BMNH). This is the first record of this subtribe from the Celebes.

Remarks. - In the key to Sulawesi Rhysodidae (Bell and Bell, 1988:8) this beetle will key to subtribe Omoglymmiina in couplet 1 . The key should be altered as follows: The second choice at couplet 1 should lead to couplet 1.1 below;

### 1.1. Median lobe of head elongate extending posteriorly to neck constriction, widely separating temporal lobes

(Rhysodina) Kaveinga histrio Bell and Bell
1.1' Median lobe not so elongate, not separating temporal lobes
(Omoglymmiina) 2
Assignment of the Sulawesi specimen to this species is provisional. The resemblance is very close, but there are few minor differences: the rings of minor setae start on segment six of the antenna (segment five in the Mindanao specimens); the temporal setae are displaced posteriorly, so that the most posterior one is at the margin of the temporal lobe; the pronotum has only one angular seta and is without marginals.

A longer series of specimens from Sulawesi might show that these differences are consistent, or the collection of a male specimen might reveal differences in the calcars or other secondary sexual characters.

## Amendment of Locality Data of Previously Described Species <br> Omoglymmius (Hemiglymmius) germaini (Grouvelle)

This species was described from two specimens in the Paris Museum, both labelled as coming from Cochabamba, Bolivia (Bell and Bell, 1982). We doubted the labels because the species is close to $O$. (H.) javanicus (Grouvelle) from Java, and belongs to a genus not otherwise represented in the neotropical region. Our suspicions were confirmed by a specimen found in the Copenhagen collection labelled "Nongka Djadjar, Øst Java, Aug. 1913, J. Th. Skovgaard" (ZMUC). This locality is at $7.54^{\circ} \mathrm{S}-112.49^{\circ} \mathrm{E}$ in east Java. The specimen clearly can be distinguished from $O$. javanicus by the outer carina of the pronotum being much more inflated anteriorly.

## Revised Keys <br> Key to Adults of Species of Omoglymmius (Omoglymmius)

1. Posterolateral margin of temporal lobe oblique, meeting posteromedial margin at prominent occipital angle; posteromedial margin also oblique, posterior part of temporal lobe nearly rectangular
(Europe to western Asia)
1'. Posterolateral margin of temporal lobe rounded; occipital angle not prominent; posterolateral margin convex, oblique or emarginate
2(1'). Antennal lobe, postantennal area densely microsculptured, not separated by antennal groove
O. continuus Bell and Bell (Sula Islands, Indonesia)
$2^{\prime}$. Antennal lobe glabrous, raised above level of postantennal area, or separated from latter by distinct antennal groove
$3\left(2^{\prime}\right)$. Inner carina distinctly narrower than outer carina at middle; prono- tal grooves coarsely, densely punctate O. malabaricus (Arrow)(southern India)
3'. Inner carina equal to or wider than outer carina at middle; pronotal grooves impunctate or sparsely punctate ..... 4
4(3'). Temporal lobe nearly circular; frontal space very small, longer than wide; median lobe short, rhomboid; carinae of pronotum only mod- erately narrowed at base; precoxal carina present ..... 5
4'. Temporal lobe reniform or oblique; frontal space larger, in most species wider than long; median lobe either not rhomboid, or, if rhomboid, elongate; inner carina either pointed posteriorly or else constricted just anterior to base, with extreme base widened; pre- coxal carina present or absent ..... 6
5(4). Medial angles of temporal lobes acute, contiguous; Stria IV with 3 - 5 setae along its length; total length $5.1-5.2 \mathrm{~mm}$. O. sakuraii (Nakane)(Japan, Viet Nam)
5'. Medial angles of temporal lobes obtuse, slightly separated; Stria IV with one or two setae near apex; total length $6.1-7.1 \mathrm{~mm}$
$6\left(4^{\prime}\right)$. Postorbital and suborbital tubercles absent ..... 7
6'. Either postorbital or suborbital tubercle present ..... 73
7(6). Fourth interval in form of sharp, raised carina O. bicarinatus Bell
(Schouten Islands, Indonesia)
7'. Fourth interval flat or somewhat elevated, but not carinate ..... 8
$8\left(7^{\prime}\right)$. Outer carina at middle equal to or only slightly narrower than inner carina, 0.66 or more of width of inner carina ..... 9
8'. Outer carina at middle 0.5 or less of width of inner carina ..... 69
$9(8)$. Elytron with short longitudinal scarp at base of Stria IV, pollinose spot medial to it except in $O$. summissus (scarp minute in $O$. politus) ..... 10
9'. Elytron without longitudinal scarp at base of Stria IV; pollinose medial spot absent (except in some $O$. wallacei) ..... 51
$10(9)$. Either or both pairs of pronotal carinae with six or more punctures (in most species with many more; punctures very fine in $O$. vadosus) ..... 11
$10^{\prime}$. Pronotal carinae without punctures, or with one or two punctures on inner carina or with one to five on outer carina ..... 49
11(10). Inner carina with many punctures ..... 12
11'. Inner carina with no, or one to three punctures ..... 33
12(11). Two to five temporal setae; posterior margin of temporal lobe bisinu- ate, forming two projecting lobes in addition to medial angles O. bituberculatus Bell and Bell(Queensland, New South Wales)
12'. One temporal seta; posterior margin of temporal lobe evenly curved ..... 13
$13\left(12^{\prime}\right)$. Median lobe of head narrow, its margins only slightly curved; outer carina of pronotum broadest at anterior margin, slightly flattened anteriorly; outer carina with lateral margin not sinuate anterior to hind angle O. summissus Bell and Bell
13'. Median lobe relatively broad, its margins more strongly curved; outer carina widest near middle, in many specimens sinuate anterior to hind angle ..... 14
$14\left(13^{\prime}\right)$. Orbital groove complete, continuously pollinose to base of temporal lobe15
14'. Pollinosity of orbital groove incomplete, ended posteriorly near pos- terior margin of eye, or else interrupted there ..... 17
15(14). Head relatively broad posteriorly, its lateral margin abruptly round- ed near base; latter transverse; anteromedial margin transverse; frontal space broadly U-shaped .... O. fringillus Bell and Bell (in part)(New Guinea)
15'. Head not broad posteriorly, lateral margin evenly rounded from eye to base; frontal space more narrow; anteromedial margin oblique ..... 16
$16\left(15^{\prime}\right)$. Outer carina markedly narrowed posteriorly, width at base less than 0.5 of greatest width; median lobe narrow, its junction with clypeus distinctly constricted; apex of median lobe obtuse; postantennal area convex, extensively pollinose O. wittmeri Bell and Bell
(Sula Island, Indonesia)
$16^{\prime}$. Outer carina scarcely narrowed posteriorly; width at base 0.9 of greatest width; median lobe relatively broad, its junction with clyp- eus scarcely constricted; apex of median lobe rounded; postantennal area less extensively pollinose O. gurneyi Bell and Bell
(Solomon Islands)
$17(14$ '). Tip of median lobe narrow, subacute; pronotum narrow, lateral margins strongly curved; eye somewhat reduced, with posteroven- tral margin oblique; antennal segments V-XI impunctateO. semperi Bell and Bell(Philippines)
17'. Tip of median lobe broadly rounded or obtuse; pronotum quadrate or subquadrate, in most specimens with lateral margins less rounded; eye round, not reduced; antennal segments VII-X in some species with punctures indistinct ..... 18
18(17'). Outer antennal segments, including X, with numerous coarse punc- tures ..... 19
$18^{\prime}$. Outer antennal segments with punctures sparse, in some species extending only to segment IX ..... 24
19(18). Pronotum subquadrate, lateral margins convergent only near apex ..... 20
19'. Pronotum with lateral margins curved, convergent from middle to apex ..... 22
20(19). Most posterior points on temporal lobes separated from one another by much less than 0.5 width of head ..... 21
20'. Most posterior points on temporal lobes separated from one another by more than 0.5 width of head ...O. fringillus Bell and Bell (in part)(New Guinea)
21(20). Median head lobe punctate O. oroensis Bell and Bell
(New Guinea)
$21^{\prime}$. Median head lobe impunctate O. ichthyocephalus (Lea)(Australia, New Guinea)
22(19'). Medial angle of temporal lobe obtusely pointed; posterior margin slightly sinuate; strial punctures elliptical, fine, sparse
$22^{\prime}$. Medial angle rounded; posteromedial margin rounded; elytral punc- tures coarse ..... 23
23(22'). Antennal segments V-X as coarsely punctate as segments I-IV; legs, abdominal sterna coarsely punctate O. puncticornis Bell and Bell
(New Guinea)
23'. Antennal segments V-X more finely punctate than segments I-IV; legs, abdominal sterna more finely punctate O. tolai Bell and Bell(New Britain, Bismarck Island)
24(18'). Pronotum elongate, lateral margins only slightly curved; temporal lobe with 30-50 punctures; median lobe obtusely rounded; marginal groove deeper posteriorly O. scopulinus Bell and Bell
(Solomon Islands)
24 '. Pronotum shorter; temporal lobe with 20 or fewer punctures; medial angle produced; posteromedial margin sinuate in most specimens; marginal groove not deeper posteriorly ..... 25
$25\left(24^{\prime}\right)$. Median lobe with approximately ten fine punctures
O. vicinus (Grouvelle) (New Guinea)
25'. Median lobe impunctate ..... 26
$26\left(25^{\prime}\right)$. Anterior portion of temporal lobe a convex pollinose ridge
O. ferrugatus Bell and Bell(Celebes)
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$27\left(26^{\prime}\right)$. Median lobe narrow, its tip acute ..... 28
27'. Median lobe relatively broad, its tip obtuse ..... 29
28(27). Pronotum subquadrate, widest, anterior to middle; outer carinae dilated, divergent near base O. classicus Bell and Bell (Admiralty Islands)
28'. Pronotum subcircular, markedly narrowed at both base and apex; outer carinae narrow, parallel at bases O. princeps Bell and Bell
(Solomon Islands)
29(27'). Outer carina narrowed posteriorly, base neither dilated nor divergent ..... 30
$29^{\prime}$. Outer carina scarcely narrowed posteriorly, base either sinuate me- dially or else distinctly dilated ..... 31
30(29). Pronotum subquadrate, lateral margins nearly parallel; base of pro- notum scarcely narrowed O. lindrothi Bell and Bell(Solomon Islands)
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31'. Medial margin of temporal lobe scarcely angulate opposite tip of median lobe; frontal space more nearly V-shaped ..... 32$32\left(31^{\prime}\right)$. Medial margin of temporal lobe produced, blunt; posteromedialmargin emarginate; lateral margins of pronotum markedly curved;lateral pits of abdominal sternum IV shallow in femaleO. manni Bell and Bell
32'. Medial angles not produced; posteromedial margin not emarginate; lateral margins of pronotum less curved, subparallel; lateral pits of sternum IV deep, round in female ............ O. regius Bell and Bell
(Solomon Islands)
33(11). Lateral abdominal sulci III-V faintly pollinose, distinct punctures absent O. vadosus Bell and Bell
(Southern Moluccas, Indonesia)
33'. Lateral abdominal sulci III-V with distinct scattered punctures or coalesced punctures ..... 34
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35(34'). Temporal lobe with 5-6 setae O. aristeus Bell and Bell (New Guinea)
35'. Temporal lobe with $0-1$ setae ..... 36
36(35'). Antennal segments V-XI punctate ..... 37
36'. Antennal segments V-XI with punctures indistinct or absent ..... 39
37(36). Antennal punctures in a basal groove; $5-7$ setae along Stria IV
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(Borneo)
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$38\left(37^{\prime}\right)$. Lateral margin of outer carina deeply sinuate anterior to hind angle O. amplus Bell and Bell
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O. modiglianii Bell and Bell(Mentawei Islands, Indonesia)
39(36'). Lateral margin of temporal lobe almost straight; anteromedial mar-gin of temporal lobe abruptly bent; frontal space very broad
O. morditus Bell and Bell (northern Moluccas)
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$40\left(39^{\prime}\right)$. Head as broad as long or broader than long; frontal space broadly U-shaped ..... 41
$40^{\prime}$. Head longer than broad; frontal space V - or U-shaped ..... 44
41(40). Outer carina slightly narrower than inner carina at middle; marginal groove deep, broad O. caelatus Bell and Bell
(Caroline Islands)
41'. Outer carina equal in width at middle to inner carina; marginal groove narrow ..... 42
42(41'). Antennal groove very narrow; temporal lobes very flat; length 5.0- 6.8 mm O. oceanicus Bell and Bell
(Caroline Islands)
42'. Antennal groove broader; temporal lobes convex; length $6.5-7.2 \mathrm{~mm}$ ..... 43
43(42'). Pronotum nearly quadrate, scarcely narrowed posteriorly
O. batchianus (Arrow)(northern Moluccas)
43'. Pronotum distinctly narrowed posteriorly, markedly narrowed an- teriorly O. humeralis (Grouvelle)
(northern Moluccas)
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44'. Antennal segments V-XI impunctate ..... 47
45(44). Inner carina of pronotum constricted just anterior to base; base broadened ..... 46
$45^{\prime}$. Inner carina not constricted just anterior to base; base truncate
O. renutus Bell and Bell (Solomon Islands)
46(45). Preorbital pit extensively pollinose; median lobe broadO. trepidus Bell and Bell
(New Guinea)
$46^{\prime}$. Preorbital pit with pollinosity restricted; median lobe narrowO. cavea Bell and Bell(New Guinea)
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47'. Punctures of temporal lobe limited to lateral margin; median lobe slightly broader, tip more obtuse; pronotum widest at middle, sides curved ..... 48
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(Philippines)
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$50\left(49^{\prime}\right)$. Anterior part of temporal lobe forming narrow pollinose ridge; gla-brous area of temporal lobe separated from antennal lobe by nearlylength of antennal lobe; temporal setae 0-3 (in most specimens 2);temporal lobe with up to three punctures near lateral margin or noneO. duplex Bell and Bell(Philippines)
$50^{\prime}$. Anterior part of temporal lobe glabrous nearly to antennal lobe, separated from latter only by rather broad antennal groove; one temporal seta; temporal lobe with many puncturesO. bouchardi Bell and Bell(Sumatra)
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51'. Pronotal carinae entirely impunctate ..... 64
52(51). Inner carina with three or more (in most species many) punctures ..... 53
$52^{\prime}$. Inner carina with one or two punctures or none ..... 56
53(52). Head twice as long as wide; median lobe elongate, margins almost parallel O. nasalis Bell and Bell (southern Moluccas)
53'. Head slightly or not at all longer than wide; median lobe lance- shaped, margins not parallel ..... 54
$54\left(53^{\prime}\right)$. Outer antennal segments punctate to segment IX; anterior portion of temporal lobe forming pollinose ridge to antennal lobe, broadly separated from glabrous portion of temporal lobeO. wallacei Bell and Bell
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(New Guinea)
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56'. Intervals II, IV not elevated; head not elongate; frontal grooves moderately broad ..... 57
57(56'). Prosternum with precoxal carinae; temporal seta absent
O. thoracicus Bell and Bell(Java)
57'. Prosternum without precoxal carinae; one temporal seta ..... 58
58(57'). Stria IV with five or six setae along its entire length ..... 59
58'. Stria IV with one or two setae near apex ..... 62
59(58). Outer carina scarcely narrowed at base O. coelebs Bell and Bell (Philippines)
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60'. Median lobe constricted at junction with clypeus; tip of median lobe acute; pronotum more nearly quadrate ..... 61
61(60'). Bases of outer carinae markedly divergentO. fraudulentus Bell and Bell(Sumatra)
$61^{\prime}$. Bases of outer carinae scarcely divergent . . O. nemoralis Bell and Bell
62(58'). Antennal segments V-X with faint basal punctures ..... 63
62'. Antennal segments V-XI impunctate O. evasus Bell and Bell(Philippines)
63(62). Median lobe of head with punctures; female with round lateral pit in Sternum IV (male unknown) O. brendelli Bell and Bell
(Celebes)
$63^{\prime}$. Median lobe of head without punctures; both sexes with deep di- agonal lateral pit in Sternum IV O. sectatus Bell and Bell
(New Guinea)
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$64^{\prime}$. Temporal setae 2-4 ..... 68
65(64). Median lobe broader, lance-shaped ..... 66
65'. Median lobe narrow, elongated ..... 67
$66\left(65^{\prime}\right)$. Lateral margin of inner carina sloped gradually to groove; temporal lobe with few punctures in position of orbital grooveO. seriatus Bell and Bell
(Celebes)
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O. gracilicornis (Grouvelle)
67(65'). Abdominal Sterna III-V with coarse punctures, these coalescent near lateral margin; Stria IV with one or two setae near apexO. consors Bell and Bell(Sumatra, Borneo)
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O. hiekei Bell and Bell(Philippines, Borneo)
68(64'). Precoxal carinae absent; outer carina as broad as inner one at middleO. quadruplex Bell and Bell(Philippines)
68'. Precoxal carina present; outer carina 0.66 as broad as inner carina at middle O. pectoralis Bell and Bell
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$70\left(69^{\prime}\right)$. Head anterior to eye elongate; 1-2 setae on mid section of outer carina in most specimens O. bucculatus (Arrow)
(Lesser Sunda Islands, Indonesia)
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$71\left(70^{\prime}\right)$. Punctures present on outer carina O. patens Bell and Bell(New Guinea)
$71^{\prime}$. Punctures absent on outer carina ..... 72
72(71'). Antennal segments V-X punctured; median lobe parallel-sided, tip

# rounded; outer carina 0.3 as wide as inner carina at mid-point; male with ventral profemoral tooth .................. O. solitarius (Arrow) 

(Andaman Island)

## 72'. Antennal segments V-X impunctate; median lobe lance-shaped, tip obtuse; outer carina 0.5 as wide as inner carina at mid-point; male without ventral profemoral tooth <br> O. impletus Bell and Bell

(Caroline Island)
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73'. Postorbital tubercle present ..... 78
74(73). Outer carina more than 0.6 as wide as inner carina at middle; mar- ginal groove not dilated ..... 75
74'. Outer carina about 0.4 as wide as inner carina at middle; marginal groove dilated O. pulvinatus (Grouvelle)
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$76\left(75^{\prime}\right)$. Median lobe broad, tip subtruncate; pronotum nearly quadrate; metasternal punctures limited to midline and margins
O. biroi Bell and Bell
(New Guinea)
76'. Median lobe narrow, tip acute; pronotum not quadrate; metaster- num entirely punctate ..... 77
$77\left(76^{\prime}\right)$. Median lobe punctate; outer carina equal to or slightly narrower than inner carina at middle; one temporal seta
O. cheesmanae (Arrow)
(New Guinea)
77'. Median lobe impunctate; outer carina distinctly narrower than inner carina at middle; temporal seta absent O. asetatus Bell and Bell(New Guinea)
78(73'). Postorbital tubercle visible only in lateral view ..... 79
$78^{\prime}$. Postorbital tubercle visible in dorsal view ..... 83
79(78). Lateral margins of pronotum nearly parallel; median lobe broad, rounded; pollinosity of orbital groove extended to posterior margin of eye O. quadraticollis (Arrow)
(Tanimbar, Indonesia)
$79^{\prime}$. Lateral margins more curved; pronotum not subquadrate; median lobe broad to narrow, obtuse to rounded; pollinosity of orbital groove less extensive ..... 80
$80\left(79^{\prime}\right)$. Outer carina narrow, curved, densely punctate
O. gressitti Bell and Bell (New Guinea)
$80^{\prime}$. Outer carina not conspicuously narrower than inner carina, sparsely punctate or impunctate ..... 81
81(80'). Inner carina truncate at base; outer carina narrowed to base
O. repetitus Bell and Bell (northern Celebes)
81'. Inner carina pointed at base; outer carina dilated at base ..... 82
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(New Guinea)
83(78). Posterior face of temporal lobe with microsculpture in grid pattern; temporal seta marginal ..... 84
83'. Posterior face of temporal lobe pilose or scaly; temporal seta not marginal ..... 85
84(83). Strial punctures relatively large, round, separated from adjacent punctures by about 0.5 of length of one of them; temporal lobe relatively convex O. craticulus Bell and Bell (New Guinea)
84'. Strial punctures small, elliptical, separated by more than length of one of them; temporal lobe strongly flattened
O. planiceps Bell and Bell
$85(83$ '). Metasternum entirely punctate ..... 86
85'. Metasternum with punctures limited to midline and margins ..... 91
86(85). Inner and outer carinae with numerous fine punctures; outer carina narrowed to base; strial punctures round, pilose, coarse ..... 87
$86^{\prime}$. Outer carina punctate; inner carina impunctate; outer carina dilated at base; strial punctures fine, especially in Striae I-III ..... 89
87(86). Width across postorbital tubercle greater than width across temporal lobe O. sus Bell and Bell(New Guinea)
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$88\left(87^{\prime}\right)$. Median lobe rounder, tip obtuse; temporal lobe with posterior me- dial margin rounded; punctures of temporal lobe finerO. monteithi Bell and Bell(Australia)
88'. Median lobe narrow, tip acute; temporal lobe with posterior medial margin slightly emarginate; punctures of temporal lobe coarserO. cupedoides, new species
(New Guinea)
$89\left(86^{\prime}\right)$. Postorbital tubercles very large, divergent; outer carina with many fine punctures; medial angle of temporal lobe rounded ..... 90
89'. Postorbital tubercles smaller, scarcely divergent; outer carina with one or two fine punctures; medial angle obtuse $O$. lentus Bell and Bell(New Guinea)
$90(89)$. Outer carina slightly narrower than inner carina at middle; outercarina at anterior 0.33 broader than paramedian groove
$90^{\prime}$. Outer carina about 0.5 as wide as inner carina at middle; outer carinaat anterior 0.33 narrower than paramedian grooveO. largus Bell and Bell(New Guinea)
$91\left(85^{\prime}\right)$. Postorbital tubercle very large; apex of pronotum less narrowed; strial punctures elliptical, very fine O. auratus Bell and Bell(New Guinea)
91'. Postorbital tubercle small; pronotum more narrowed anteriorly; strial punctures round, moderately fine ..... 92
92(91'). Median lobe broad, tip rounded; width of pronotum at middle sub- equal to width at base O. massa Bell and Bell(New Guinea)
$92^{\prime}$. Median lobe narrower, tip obtusely rounded; width of pronotum at middle clearly less than width at base ... O. denticulatus Bell and Bell(New Guinea)
Key to Adults of Species of Omoglymmius (Pyxiglymmius)

1. Many elytral setae present the length of every stria
O. pilosus (Grouvelle) (Sumatra, Borneo)
1'. Elytral setae absent from some striae. ..... 2
2(1'). Elytral intervals III, V, VI, VII narrow, carinateO. multicarinatus, new species(Celebes)
2'. Elytral intervals not carinate ..... 3
$3\left(2^{\prime}\right)$. Median lobe distinctly longer than wide, its apex opposite middle of eye; postorbit in lateral view convex, in form of deep but short, ill- defined postorbital tubercle ..... 4
3'. Median lobe transverse, as wide as long, its tip opposite anterior margin of eye; postorbit flat, bounded ventrally by well-defined sub- or postorbital tubercle ..... 6
4(3). Medial emargination of temporal lobe relatively shallow, its depth about 0.25 of its length; basal setae present on antennal segments VIII-X O. lederi (Lewis)(Caucasus)
4'. Medial emargination of temporal lobe deep, its depth 0.5 or more of its length; basal setae present on antennal segments V or VI-X ..... 5
$5\left(4^{\prime}\right)$. Temporal lobe broadly rounded posteriorly; postorbital tubercles scarcely visible in dorsal view; anteromedial margin of temporal lobe strongly curved O. subcaviceps (Grouvelle)5'. Temporal lobe with distinct occipital angle, margin markedly obliquebetween occipital angle and eye; postorbital tubercles prominent indorsal view; anteromedial margin of temporal lobe oblique
6(3'). Five to six setae present on length of Stria II, IVO. krikkeni Bell and Bell(Sumatra)
6'. Setae absent from Stria II, 0-2 setae present near apex of Stria IV . . 7
$7\left(6^{\prime}\right)$. Outer carina of pronotum distinctly narrower than paramedian groove;
outer carina nearly straight, of even width ........ O. armatus (Arrow)
(Andaman and Nicobar Islands)
7'. Outer carina wider than paramedian groove, widest near middle,
tapered both anteriorly and posteriorly ........................... 8
$8\left(7^{\prime}\right)$. Postorbital tubercles large, prominent in dorsal view; paramedian $\begin{aligned} & \text { grooves relatively shallow. ........................................... } 9\end{aligned}$
$8^{\prime}$. Postorbital tubercles relatively small, not prominent in dorsal view; paramedian grooves deep, more sharply defined ................... . 10
9(8). Elytral intervals flat; intervals, pronotal carinae, temporal lobes
strongly microsculptured in female; lateral pit of Sternum IV in female
longitudinally striate, brace weakly developed ...O. opacus Bell and Bell (Sumatra)
$9^{\prime}$. Elytral intervals convex; intervals, pronotal carinae, temporal lobes shining without microsculpture; in female, lateral pit of Sternum IV not striate, brace strongly developed
O. hesperus Bell and Bell
(Mentawei)
$10\left(8^{\prime}\right)$. Apex of antennal segment XI with short, stubby stylet; temporal lobes
with 20 or more punctures ................. O. cristatus Bell and Bell
(Philippines)
$10^{\prime}$. Apex of antennal segments XI without stylet; temporal lobe with 1-
12 punctures ....................................... . O. strabus (Newman) (Borneo, Java, Sumatra, and Malay Peninsula)

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[^0]:    ${ }^{1}$ Zoology Department, University of Vermont, Burlington, Vermont 05405-0086.
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